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ABSTRACT

An annotated bibliography of 60 technical reports and publications on research conducted by the Personnel Research Division of the Air Force Human Resources Laboratory (AFHRL) is presented. Research covers the identification and measurement of individual aptitude, motivation, morale, attitude, and environment factors. Keyword and personal author indexes are included. (SH)

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AIR FORCE HUMAN RESOURCES LABORATORY

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ANNOTATED BIBLIOGRAPHY OF THE PERSONNEL RESEARCH DIVISION REPORTS (1973 – 1975)

Edited By

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PERSONNEL RESEARCH DIVISION
Lackland Air Force Base, Texas 78236

May 1976

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This bibliography presents an unclassified, unlimited, annotated bibliography of technical reports and other publications on research conducted by the Personnel Research Division, Air Force Human Resources Laboratory (AFHRL). The cited references cover the period calendar year 1973 through calendar year 1975. This report supplements Personnel Research Division Abstracts 1954–1971 and Abstracts of Technical Reports, 1972.

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PREFACE

The Personnel Research Division conducts research into the identification and measurement of individual aptitude, motivation, morale, attitude, and environment factors. Evaluates manpower development programs. Develops improved methodologies for classification, assignment, promotion and retention. Performs research to improve performance evaluation measurement and criteria. Develops tools for incorporating research findings into operational Air Force personnel systems with the goals of maximizing their value to the Air Force and/or individual service-members's satisfaction.

This annotated bibliography presents a collection of abstracts from technical reports published by the Personnel Research Division, Air Force Human Resources Laboratory (AFHRL), Lackland Air Force Base, Texas, during the time period calendar year 1973 through calendar year 1975.

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ANNOTATED BIBLIOGRAPHY OF THE PERSONNEL RESEARCH DIVISION REPORTS (1973 – 1975)

1 **Shenk, F. Development and validation of scores to predict officer career status. March 1973 (AFHRL-TR-73-1, DDC Document AD-760 540) (Project 7719, Task 771907, Work Unit 77190727).** During 1963 a long-term study of officer input, from the principal Air Force commissioning sources, was initiated. This study was designed to determine the predictability of an officer's career decision and to evaluate relationships between career intent, various demographic, environmental and attitudinal factors, and career status. This report presents the development and validation of various scores designed to predict career status.

Survey data were collected from individuals before they entered active duty, and annually, through five years of active military service. The scores designed to predict career status were determined from each individual's yearly survey responses. Generally, the relationship between career status and the scores based on responses prior to commissioning were quite low; however, there was a definite increase in prediction after the subjects experienced active duty. The largest increase in predictability occurred during the first two years of active duty. This seems to indicate a plateau in the subject's attitude toward the military career. Offer of Air Force opportunities such as education, training, and Regular commissions might be more effective at this point, than at the time of commissioning. In addition, from an economical standpoint, the Air Force might realize considerable savings in training costs by sending those junior officers most likely to remain on active duty to the more expensive educational and training programs. The Career Intent Score was the measurement device most predictive of future career status although correlations were only moderate.

2 **Vertreace, W.C., & Knouse, S.B. Attitudes of airmen toward the Weighted Airman Promotion System. April 1973 (AFHRL-TR-73-2, DDC Document AD-767 577) (Project 7719, Task 771904, Work Unit 77190419).** The Weighted Airman Promotion System (WAPS) was designed to select airmen for promotion on the basis of six weighted factors. It was instituted as a means for increasing knowledge of standing in promotion competition and insuring equitable promotion opportunities. The present survey was initiated to assess the attitudes of airmen affected by WAPS and determine if airmen perceive WAPS as having fulfilled its objectives.

The more favorable attitudes towards the WAPS system were held by airmen who had been promoted under the system, although both promoted and nonpromoted personnel feel that WAPS is fairer than the whole-man system with promotion boards. Although a substantial number of the first term enlistees felt that they did not know enough about the old system to make a comparison, the general consensus was that WAPS is fairer than the old system.

An egocentric effect, much like that found with promote/nonpromote status, was found when using term of enlistment as the independent variable. Third termers favored giving more importance to time in service, while first term airmen did not. First term airmen placed more value on the Speciality Knowledge Test.

Aptitude test scores of airmen, who felt that WAPS tests should be increased in importance, were higher than those for airmen who would give the tests less weight. However, lower aptitude personnel rated specialty knowledge tests current and adequately covering the career field. As a test, the SKT was regarded more favorably by the lower aptitude group than by their higher aptitude peers.

3 **Shenk, F., Watson, T.W., & Hazel, J.T. Relationship between personality traits and officer performance and retention criteria. May 1973 (AFHRL-TR-73-4, DDC Document AD-767 198) (Project 7719, Task 771907, Work Unit 77190703).** This study concerns an examination of three self-report personality inventories (FCSRI-A, FCSRI-B, DAI) and a Peer Rating Scale designed to measure five personality factors: Surgency, Agreeableness, Conscientiousness, Emotional Stability, and Culture. Regression analysis techniques were applied using these measures to predict retention and officer effectiveness as measured by Officer Effectiveness Reports (OERs). Analysis of the data indicated that measurements based on the Peer Ratings had higher predictive value for both criteria

than the factor scores derived from the paper-and-pencil personality tests which rarely reached significance levels. Furthermore, peer ratings had a higher level of prediction for officer performance than retention. A regression equation including the self-report inventories, peer rating factors, and peer rating traits yielded an R of .19 for retention and an R of .36 for officer performance measures. When grade, Duty Air Force Specialty Code (DAFSC) and education were included as predictor variables, the correlations were .39 for retention and .43 for the OER rating.

4 **Vitola, B.M., Mullins, C.J., & Croll, P.R. Validity of Armed Services Vocational Aptitude Battery, Form 1, to predict technical school success. July 1973 (AFHRL-TR-73-7, DDC Document AD-767 578) (Project 7719, Task 771910, Work Unit 77191001).** Validities of the four aptitude indexes of the Armed Services Vocational Aptitude Battery (ASVAB), Form 1, and the Airman Qualifying Examination-66 (AQE), were determined for final grades in 46 airman training courses. Comparisons were made between AQE and ASVAB in terms of their ability to predict technical school success. The data demonstrate that ASVAB is an effective instrument for use in the military high school testing program and may be used satisfactorily, as is AQE, to assign enlistees to technical training. Three of the four selector aptitude indexes of the ASVAB (General, Administrative, and Electronics) evidenced their appropriateness by having higher validities for their appropriate courses than any of the other ASVAB aptitude indexes. This sort of specific validity did not obtain for the selector index of the Mechanical cluster. However, 15 of the 16 validities obtained for the selector index in the Mechanical area were at a signigicant (.01), useful and acceptable level.

5 **Mullins, C.J., Vitola, B.M., & Abellera, J.W. A correlational analysis of drug abuse in the Air Force. July 1973 (AFHRL-TR-73-8, DDC Document AD-770 017) (Project 7719, Task 771913, Work Unit 77191304).** Information was collected on 4,689 subjects who admitted to having used drugs before entering the Air Force. A correlational analysis of this sample indicated that there appears to be a general tendency to abuse several drugs if a subject has abused one, and that marijuana appears to be associated with multiple drug abuse more than any other drug. Extent of drug abuse of all drugs studied appears to be associated with low performance on aptitude measures and educational level. Other correlational analyses indicated that the only drug significantly associated with low Airman Performance Reports is marijuana, and that the pattern of optimal weights among background variables in forming prediction composites against Airman Performance Reports among drug abusers is not significantly different from the pattern of such weights among non abusers.

6 **Guinn, N., & Germadnik, G.J. Feasibility of developing a procurement strategy for school of military sciences, officer input. August 1973 (AFHRL-TR-73-9, DDC Document AD-770 018) (Project 7719, Task 771908, Work Unit 77190801).** This report describes the origin and development of a data base for possible use in increasing the effectiveness of officer procurement for the School of Military Science, Officer training program. Distributions are included to illustrate the type and magnitude of differences existing between the various colleges and universities attended by entrants into SMS-O training. The relationships between officer effectiveness criteria and the characteristics of the colleges and universities from which the junior officers graduated were analyzed. Results of analyses indicate that criterion differences found are due to some extent to the differences in the characteristics of the academic institutions' student bodies. It is concluded that these data could be utilized effectively in SMS-O officer recruitment, and a combination of these data with similar data on current AFROTC detachments could be used to form the basis of a flexible, cost-effective procurement program.

7 **Wilbourn, J.M. The Air Reserve as an all-volunteer force. September 1973 (AFHRL-TR-73-12, DDC Document AD-773 804) (Project 7719, Task 771902, Work Unit 77190230).** The Air Reserve force, consisting of the Air Force Reserve (USAFR) and the Air National Guard (ANG), is facing a critical period of adjustment with the advent of the all-volunteer force. If the Air Force is unable to attract sufficient numbers of personnel into the Regular Air Force to satisfy mission requirements, or if additional personnel are required in case of a national emergency, the role of the Reserve force becomes one of primary importance. In order to assess the effect of an all-volunteer concept on the Reserve force, an attitude survey was administered to a random sample of USAFR and ANG non-prior service 1970 enlistees to determine their attitudes and opinions about the military in

general and the Air Force in particular. Biographical, socio-economic, aptitudinal and attitudinal data were analyzed by draft vulnerability category and expressed attitude toward volunteer military service. Analyses indicated a general lowering of aptitude and educational level in the reduced quantity of enlistees who will volunteer for Reserve duty. However, intensified recruitment of minority groups, which now constitute less than five percent of the Reserve force, might supplement any projected decrease in numbers of enlisted accessions. Various negative aspects such as military discipline, salary, and interference with civilian job were indicated as contributing factors to non-reenlistment in the Reserve force. A survey of inducements to reenlist as preferred by the sample indicated increased pay, veteran's benefits on retirement, and reenlistment bonuses may be effective in increasing Reserve retention rates. Certain non-monetary benefits such as completion of education at the government's expense, or guaranteed promotions may be quite effective in inducing prospective Reserve enlistees to volunteer for the Regular Air Force in lieu of their Reserve tour.

8 **Mullins, C.J., & Massey, I.H. An evaluation of item-by-item test administration. May 1973 (AFHRL-TR-73-14, DDC Document AD-764 178) (Project 7719, Task 771913, Work Unit 77191302).** A battery of three tests was administered to two groups of basic airmen in their first week of basic training. Group A (N = 298) was tested in the normal way; Group B (N = 317) was tested with an item-by-item form of administration. The purpose was to determine whether the item-by-item administration would be more efficient than the usual method. Results did not indicate that the item-by-item administration was in any way superior to the usual.

9 **Guinn, N., Farmer, C.B., & Wilbourn, J.M. Effect of an all-volunteer force on input into the school of military sciences, officer training program. December 1973 (AFHRL-TR-73-19, DDC Document AD-775 714) (Project 7719, Task 771902, Work Unit 77190230).** To determine the impact of the volunteer force on officer accessions, a total of 3,931 trainees entering the School of Military Sciences, Officer training program during FY 1972–1973 were surveyed and categorized into groups based on draft vulnerability and expressed attitude toward voluntary military service, prior service experience, rated/non-rated status, and entry before and after November 1971. Results indicate that NPS officer trainees are motivated to some extent by draft pressure. In general, prior service personnel and minority groups express a more favorable attitude toward voluntary military service. An increase in positive attitude is also perceptible after the military pay increase became effective. Comparisons on other demographic, aptitudinal, and attitudinal variables revealed significant differences between self- and draft-motivated trainees and between prior and non-prior service personnel.

10 **McLaurin, W.A. Validation of a battery of performance tests for prediction of aerospace ground equipment course grades. November 1973 (AFHRL-TR-73-20, DDC Document AD-774 586) (Program Element ILIR0011; Contract AF 41609-71-C-0032, University of Alabama in Birmingham).** A battery of nine performance tests (Performance Assessment System, PAS) was administered to 204 airmen trainees enrolled in an Aerospace Ground Equipment Repairman (AGE) course at Chanute Air Force Base, ATC. The objectives of the research program were to determine the validity of the PAS tests for criterion course grades; to determine the increase in validities for the course grades by combining the PAS scores with the AQE Electronic AI and to determine the validity of the PAS tests for the course grades of "low-aptitude" airmen.

Analyses of the data indicated that the PAS tests made a significant contribution to the Electronics AI in predicting course grades, and, for most course grades, the PAS tests were equal in validity to the Selector Index. The PAS tests, in general, made more contribution to the grades based upon trouble-shooting and repair problems than did the other predictors. The sample of trainees, were separated into upper and lower groups based upon AFQT percentile rank. The validities of the AFQT, AQE indexes and PAS tests were determined for each resultant group. The PAS tests were approximately equal in validity to the other predictors for criterion course grades for the upper group and superior to them for the lower group. Recommendation for subsequent research and development are given.

11 **Vitola, B.M., Mullins, C.J., & Brokaw, L.D. Comparative data on a sample of all-volunteer enlistees with 1970 through 1972 Air Force accessions. July 1973 (AFHRL-TR-73-26, DDC Document AD-767 579) (Project 7719, Task 771916, Work Unit 77191602).** A data base was established to which characteristics of the all-volunteer force could be compared. If the hypothesis is tenable that the sample of 1973 enlistees used in this study represents the qualitative characteristics of the all-volunteer force, current aptitude levels suggest sufficient quality for the majority of Air Force jobs. Analysis of the data resulted in the following conclusions: (a) There has been a gradual loss of high aptitude people over a three-year period. If this trend continues, there will be a probable need to offer further incentives to enlist individuals who can perform in the more critical aptitude areas. (b) There will be no dramatic increase in the proportion of Negroes in the all-volunteer force. Air Force has enlisted, and continues to enlist, a proportion of Negroes equal to, or greater than, the proportion of Negroes in the popoulation. (c) Under present reenlistment policy considerations, Air Force will remain an excellent source from which industry may draw skilled personnel in over 200 job types.

12 **Guinn, N., & Truax, S.R. Comparison of volunteer attitudes and career motivation among officer and airman personnel. October 1973 (AFHRL-TR-73-28, DDC Document AD-772 676) (Project 7719, Task 771902, Work Unit 77190232).** Should problems arise in procuring a sufficient number of qualified personnel to maintain viable force levels under zero-draft condition, it becomes necessary to identify incentive programs which could be used to stimulate recruiting effort. A total of 3,391 officer trainees and 9,333 basic airmen entering service during fiscal year 1972 were surveyed to determine the effect of certain incentives on their attitude toward voluntary military service and the perceived positive and negative aspects of a military career. Results indicate that the *choice of career field incentive* had the greatest impact on expressed volunteerism for officer personnel. *Career field choice* and *variable term of service commitment* had an equally positive influence on airman attitudes. From an officer quality standpoint, pay, promotion, and educational incentives attract officers of quality similar to those whose negative attitudes toward voluntary military service remains unchanged. For airman personnel, those attracted by the pay incentives demonstrate higher performance in all aptitude areas than those with a negative attitude toward military service. Airman and officer personnel differ in their perception of the most satisfying aspects of a military assignment. *An interesting job* was the factor most widely selected as a satisfier by officers, *opportunity for technical training* by airmen; the outstanding dissatisfier for both groups was *perceived lack of personal control over their career. Isolated tours* and *separation from family* were perceived as the most negative aspects of an Air Force career.

13 **Croll, P.R., Mullins, C.J., & Weeks, J.L. Validation of the cross-cultural aircrew aptitude battery on a Vietnamese pilot trainee sample. November 1973 (AFHRL-TR-73-30, DDC Document AD-778 072) (Project 7719, Task 771913, Work Unit 77191303).** The present study is validation of the Cross-Cultural Aircrew Aptitude Battery (CCAAB) with a Vietnamese pilot trainee sample. Results of this study indicate that the CCAAB is an acceptable predictor of pilot success for foreign national pilot candidates, and that optimum prediction is obtained when predictor sets and regression weights are nationality-specific. Recommendation is made to re-validate the CCAAB on each nationality for which it is to be used, in order to determine the unique optimum predictor sets and weights for that nationality.

14 **Wilbourn, J.M., & Guinn, N. Feasibility of using special measures in the classification and assignment of lower mental ability airmen. November 1973 (AFHRL-TR-73-31, DDC Document AD-777 831) (Project 7719, Task 771909, Work Unit 77190901).** A battery of eleven non-verbal tests were administered to a sample of 2,362 non-prior service enlistees who had been selected to one of seven technical schools. The usefulness of additional aptitudinal and educational data was also investigated. The number of significant relationships between certain non-verbal tests and final technical school grade varied as a function of mental category and career field. When all non-verbal tests were used as a composite significance was found in all courses for the total group and in three of five courses for the lower mental ability groups. On cross-validation the number of significant relationships between the non-verbal composite and final school grade were reduced to four total

group courses and one lower ability group course. When added to the selector aptitude index (AI), the non-verbal tests made a significant and unique contribution to the prediction of technical school success over and beyond the selector AI alone. Further investigation indicated that additional aptitudinal and educational data added significantly to the prediction system in some courses.

Results indicate that the use of non-verbal tests as well as other aptitudinal and educational data could make a significant contribution if added to the operational selection and classification battery.

15 **Mullins, C.J., Vitola, B.M., & Michelson, A.E. Variables related to pre-service cannabis use in a sample of Air Force enlistees. November 1973 (AFHRL-TR-73-33, DDC Document AD-776 778) (Project 7719, Task 771913, Work Unit 77191304).** A sample of 4,564 self-admitted cannabis users was compared with a sample of airmen who had no known record of drug abuse. This study indicates that there is a very strong likelihood for cannabis users to use other drugs. There are relationships between cannabis abuse and geographic area of enlistment, religious preference, aptitude scores, race, educational level, and age at enlistment. Cannabis abuse is also related to the likelihood of getting an undesirable discharge, to Airman Performance Report, and to promotion rate.

16 **Echternacht, G.J., Reilly, R.R., & McCaffrey, P.J. Development and validity of a vocational and occupational interest inventory. December 1973 (AFHRL-TR-73-38, DDC Document AD-774 573) (Program Element ILIR0012; Contract AF 41609-72-C-0030, Educational Testing Service).** Between January and April 1973, over 3,100 airmen in eight service career fields with at least six months on-the-job experience and 300 recruits in basic training returned interest inventories, termed the Vocational and Occupational Interest Choice Examination (VOICE). This interest inventory was designed to measure the vocational interests of enlisted men entering the Air Force. Items forming the inventory were primarily generated by examining job analyses in relation to the airman classification structure. The purpose of this effort was to develop and validate a prototype of an interest inventory that could be used by recruiters with the Guaranteed Enlistment Program. Both a priori and occupational scales were developed based on response obtained by mail inventory administration of airmen who indicated satisfaction with their career fields. Scales were developed on half-samples and a cross-validation technique employed. A comparison was made, in order to assess validity, of the number of individuals correctly predicted to be members of a service career field or "men-in-general" using the scales versus the number of individuals one would expect to correctly predict without use of the scales. Scale weights developed in one half-sample were applied to responses obtained in the other half-sample in the above comparison. Recommendations for further developmental effort were made.

17 **Guinn, N. Factors related to adaptability to military service among 1965 airman accessions. September 1973 (AFHRL-TR-73-42, DDC Document AD-768 328) (Project 7719, Task 771902, Work Unit 77190205).** Distributions were accomplished to demonstrate the relationships between age, educational level, and AFQT scores of the 1965 airman accessions and their reenlistment desirability at the completion of their initial tour. The largest percentage of undesirable enlistees was found in the high school non-graduate, Category IV, and 17 year old groups. Using these three categories of variables, it was found that it would be possible to eliminate 34 percent of the undesirables, although 76 percent of the individuals falling in this three category group actually proved to be successful in their military career. It was emphasized that caution should be used in attempting to establish a screening procedure to identify undesirable enlistees since a significant number of potentially qualified personnel might be excluded at the same time.

18 **Valentine, L.D., Jr., & Cowan, D.K. Comparability study of Armed Services vocational aptitude battery scores from answer sheet and answer card administration. January 1974 (AFHRL-TR-73-55, DDC Document AD-775 048) (Project 7719, Task 771910, Work Unit 77191002).** Armed Services Vocational Aptitude Battery (ASVAB) Form 2 was standardized for Digitek answer sheets. In September 1973, the Digitek scoring facility at Randolph AFB will be inadequate to handle anticipated scoring load. Consequently, ASVAB answer forms have been redesigned for processing via a Hewlett-Packard mark-sense reader from IBM card size forms which are more compressed than was the Digitek form. Score comparability from administrations on the two answer forms was investigated.

It was found that the answer form change had negligble effect on average examinee performance overall score distributions, or correlations among the battery's tests. Significant interaction between initial ability (as measured by the AFQT) and answer form used was found for two tests (Word Knowledge and Coding Speed); however, the interaction did not follow a clearcut pattern. It was recommended that existing ASVAB conversion tables continue in use until completion of a full restandardization study.

19 **Miller, R.E. Optimal assignment of Air Force pilots. February 1974 (AFHRL-TR-73-59, DDC Document AD-781 035) (Project 7719, Task 771912, Work Unit 77191208).** This study addresses the problem, posed by Tactical Air Command, of whether a pilot on completion of undergraduate pilot training can be optimally assigned to a particular type of aircraft or mission. The problem was approached by using peer ranks to identify pilots of above average competence in each of three specialties. Using only these pilots as subjects, a multiple discriminant analysis was performed to yield a system for identifying a unique assignment for each pilot. The system uses ten test scores and training grades to classify a new pilot as optimally assignable to a transport, fighter, or reconnaissance aircraft or mission. The peer ranking was found to be predictable, and pilots actually assigned in accordance with their optimal assignments were shown to be better pilots, as measured by the peer ranking, than pilots not optimally assigned.

20 **Stevens, C.C. Long term effects of drug use on general mental ability. December 1973 (AFHRL-TR-73-60, DDC Document AD-775 722) (Project 7719, Task 771913, Work Unit 77191306; Contract AF 41609-72-C-0035, Technology Incorporated).** The purpose of this study was to determine if there was significant long-term decrement in general mental ability as a result of drug use. For a sample of known drug users, at least one control subject for each user had been matched as closely as possible to the user by the Air Force on AQE general aptitude index, age at enlistment, year of enlistment and home of record. Scores were obtained from the subjects' high schools by the contractor on general mental ability tests administered during their high school careers. These scores were converted to a common form to allow ready comparison. Distributions were made of the number of times the subject used a given drug versus deciles of performance on the high school test score, length of use versus performance deciles, and number of times versus performance deciles within length-of-use categories. The control subjects were maintained in the use category of their matching drug users and similar distributions were made. These distributions were made for each of seven drug categories. In addition, a similar distribution was made of the number of drugs used by the subject versus performance deciles and of the total number of years any drug was used versus performance deciles. A matrix of intercorrelations was developed for all meaningful variables available in the drug user sample. The results of the study seem to indicate an overall intelligence decrement in the drug user sample, but no significant correlation was observed between duration, quantity or frequency of drug use and change in mental ability.

21 **Vitola, B.M., Mullins, C.J., Williams, J.D., & Michelson, A.E. Preliminary evaluation of the effectiveness of Air Force advertising. January 1974 (AFHRL-TR-73-62, DDC Document AD-775 049) (Project 7719, Task 771913, Work Unit 77191308).** The Airman Enlistment Questionnaire was administered to a sample of non prior-service enlistees, 1,667 males and 300 females. Analysis of the responses shows (1) educational opportunity is the strongest motivator for enlisting in the Air Force, (2) there is an indication that Air Force advertising should make different appeals to men and women, and (3) Air Force radio programs are not reaching a large number of the desired population. Relationships between these and other variables will be examined in a more comprehensive study involving approximately 12,000 subjects.

22 **Boyd, K.N., & Jones, H.H. An analysis of factors related to desertion among FY 1968 and FY 1969 Army accessions. January 1973 (OASD/M&RA-MR-73-1, AFHRL-TR-73-63, DDC Document AD-772 731) (Project 4499, Task 449907, Work Units 44990745 and 44990749; Contract AF 41609-72-C-0038, Human Resources Research Organization (HumRRO)).** Desertion among Army accessions who entered the service at a time when entrance requirements were less restrictive for some personnel was investigated. Several personal and demographic factors were found to distinguish deserters from non-deserters. Implications for personnel selection and management are discussed on the basis of anticipated desertion rates for those factors reflecting backgrounds prior to service entry.

23 **Beusse, W.B. Analysis of survey findings concerning the USAFI high school GED program. June 1973 (OASD/M&RA-MR-73-2, AFHRL-TR-73-64, DDC Document AD-772 680) (Project 4499, Task 449906, Work Unit 44990642).** This Study provides information concerning the training of GED participation and its effect upon GED attainment, the degree of encouragement received and initiative demonstrated by the serviceman, where and how the serviceman heard about the GED program, participation in preparatory courses and their effect upon GED attainment, the knowledge the serviceman has about his success, conversion of GED test results into official state issued high school equivalency certificates and the reasons why individuals do not participate in the program.

24 **Beusse, W.E. In-service and post-service benefits of GED program participation. December 1972 (OASD/M&RA-MR-73-3, AFHRL-TR-73-65, DDC Document AD-778 110) (Project 4499, Task 449906, Work Unit 44990642).** This study analyzes the benefits which accrue to servicemen who participate in and pass the GED equivalency tests. Achievement of GED equivalency was found to result in tangible benefits for the individual, both while in the service and in civilian life. GED recipients attained higher pay grades than those who did not receive equivalency certification. In civilian life, GED recipients were more likely to be employed in higher paying, more prestigious occupations. Also, GED holders had higher mean weekly earnings than non-high school graduates without a GED. Receipt of an official state certificate was found to increase the level of benefits which the individual received in civilian life.

25 **Nadel, A.B. Attitudes of youth toward military service: selected data from four surveys, May 1971 to November 1972. June 1973 (OASD/M&RA-MR-73-4, AFHRL-TR-73-66, DDC Document AD-778 111) (Project 4499).** Selected data tabulations were extracted from a HumRRO Consulting Report Summarizing the results of three national surveys of attitudes of youth toward military service. Data from the fourth survey were added to complete the two year series of surveys so far available. The period covered included the two years of 1971–1972, with field surveys accomplished by Gilbert Youth Surveys Inc., and data analysis by HumRRO. The present report selected data from various tabulations, converted these data into graphic form, with certain few exceptions, and presented the data in a format believed useful to manpower management.

26 **Fisher, A.H., Jr., & Harford, M.A. Trends in enlistment motivation: results of AFEES surveys of enlisted men from April 1971 to April 1972. September 1973 (OASD/M&RA-MA-73-1, AFHRL-TR-73-68, DDC Document AD-778 089) (Project 4499, Task 449907, Work Unit 44990750; Contract AF 41609-73-C-0030 Human Resources Research Organization (HumRRO)).** A year long survey was conducted at a sample of Armed Forces Entrance and Examining Stations to ascertain enlistment motivation of individuals entering military service. During the survey period of April 1971 to April 1972 there was a decline in draft motivated enlistments with learning skill or trade and the opportunity for advanced education as the most desirable motivators. The survey also showed the importance of family, friends, recruiter on determining in which service a man enlists.

27 **McGoff, R.M., & Harding, F.D. A report on literacy training programs in the armed forces. April 1974 (OASD/M&RA-MR-74-6, AFHRL-TR-73-69, DDC Document AD-781 366) (Project 4499, Task 449906, Work Unit 44990641; Contract AF 41609-71-C-0031, International Training Consultants, Inc.).** The purpose of the study was to describe the status of literacy training programs in the military services during the summer of 1971 and to develop suggestions for more effective training. Data was obtained through questionnaires, interviews, record search, and observation. The report showed wide diversity in methods and effectiveness of the various programs. The inclusion of procedures for follow-up evaluation was suggested.

28 **Waller, E.A. Young men and military service: condensation of volume V, youth in transition. January 1974 (OASD/M&RA-MR-74-1, AFHRL-TR-73-70, DDC Document AD-777 913) (Project 4499, Task 449907, Work Unit 44990746).** Condensation of a report documenting a study to discover what factors influence young men to enlist in the military service as opposed to taking jobs or continuing education. The study covers a span of four years, 1966–1970, in the lives of 2,213 young men, beginning in the tenth grade and ending one year after high school. The major finding of the study was that there is no single military type. Enlistees are not characterized by any particular profile of background, ability or personality.

29 **Alley, W.E. Development of a data base for AFROTC management analysis–1973 update. February 1974 (AFHRL-TR-73-74, DDC Document AD-779 774) (Project 7719, Task 771908, Work Unit 77190801).** This is one of a series of reports describing the development of long-term AFROTC detachment effectiveness criteria and the relationships between the criteria and characteristics of the host college or university. Normative data are presented for selected criteria obtained from a seven year longitudinal study of detachment graduates entering active duty in 1963-64. The criteria included various measures of gross production, training success, aptitude level, career retention and cost effectiveness.

Criterion stability across time was determined by comparing the present data with similar measures obtained in an earlier study. Multiple regression techniques were used to analyze relationships between the criteria and a comprehensive set of institutional variables. Implications of findings for evaluating both current detachments and proposed detachment sites were discussed.

30 **McGrevy, D.F., & Valentine, L.D., Jr. Validation of two aircrew psychomotor tests. January 1974 (AFHRL-TR-74-4, DDC Document AD-777 830) (Project 7719, Task 771915, Work Unit 77191502).** This study documents the initial validation of two psychomotor tests developed by the Air Force Human Resources Laboratory. The tests, known as Two-Hand Coordination and Complex Coordination, bear the names of two devices used in aircrew selection in World War II, but the new tests do not closely resemble the old. The new tests use equipment which takes advantage of solid-state electronics and a mini-computer. These tests were validated on a sample of 121 student officers scheduled for pilot training. Criteria were graduation from pilot training and attrition by reason of flying deficiency. Multiple regression analyses supported the conclusion that the two psychomotor tests together make a significant contribution to prediction of graduation in the context of the Air Force Officer Qualifying Test. Correlation data suggested that Complex Coordination is the more effective of the psychomotor tests when taken singly. A second validation study, using a similarly defined sample of 92 subjects, was focused only on Complex Coordination. Scores on this test contributed significantly to the prediction of graduation in the context of the Air Force Officer Qualifying Test. In the same context, Complex Coordination contributed significantly to prediction of a criterion category containing flying deficiency eliminees and self initiated eliminees. It is concluded that the psychomotor tests, especially Complex Coordination, are effective in predicting performance in undergraduate pilot training. It is recommended that an operational version of the tests and equipment be developed and used in a large scale validation study.

31 **Miller, R.E. Development and standardization of the Air Force Officer Qualifying Test Form M. March 1974 (AFHRL-TR-74-16, DDC Document AD-778 837) (Project 7719, Task 771912, Work Unit 77191212).** Air Force Officer Qualifying Test Form M was constructed as a replacement for AFOQT Form L in Fiscal Year 1974. The new form serves the same purposes as its predecessor and possesses basically the same characteristics. It yields Pilot, Navigator-Technical, Officer Qualify, Verbal, and Quantitative composite scores. Three sets of conversion tables are provided for examinees at the various educational levels where the test is administered. Standardization was accomplished by equipercentile conversion to composites of Project TALENT tests from a previous form which was administered to Air Force Academy candidates, and thence to the new form in a stratified sample of basic airmen. This strategy permits the new AFOQT scores to be related to Academy candidates and to 12th grade males in the original Project TALENT study. Because recent operational data suggest that the AFOQT is becoming too difficult, a correction which was used prior to AFOQT-64 was reinstated. The correction is for the unusually high academic aptitude of the Academy candidate group, especially with respect to the quantitative domain. The correction primarily affects the Navigator-Technical, Officer Quality, and Quantitative composites and should lead to somewhat increased qualification rates without fundamentally changing the AFOQT normative base.

32 **Saunders, J.R., Vitola, B.M., & Mullins, C.J. Correlates of barbiturate use. March 1974 (AFHRL-TR-74-21, DDC Document AD-783 846) (Project 7719, Task 771913, Work Unit 77191304).** A sample of 448 self-admitted pre-service barbiturate users was compared with a control sample of airmen with no known record of drug abuse. Within the sample of barbiturate users, several variables were examined to see if they were associated with degree of barbiturate use. The barbiturate sample differs significantly from the control sample in that barbiturate users are disproportionately

represented in the North-Northeast and Far West-Pacific Coast enlistment areas, they more often indicate no religious preference, and they enlist at a younger age. Degree of barbiturate use is negatively associated with aptitude, educational level, and with measures of success in the Air Force. However, degree of barbiturate use is positively associated with the use of other drugs.

33 **Earles, J.A., Mullins, C.J., & Vitola, B.M. Variables related to amphetamine use. March 1974 (AFHRL-TR-74-22, DDC Document AD-783 236) (Project 7719, Task 771913, Work Unit 77191304).** A sample of 985 self-admitted amphetamine users was compared with a sample of airman who had no known record of drug abuse. Results of this study indicate that there is a very strong likelihood for amphetamine users to abuse other drugs. There are relationships between amphetamine use and geographic area of enlistment, religious preference, aptitude scores, educational level, and age at enlistment. Amphetamine use is also related to the likelihood of getting an undesirable discharge and to lower APR ratings.

34 **Fisher, A.H., Jr., Harford, M.R., & DiSario, M.R. Enrollment potential for college based military officer training programs: a comparison of results conducted in May 1972 and May 1973. January 1974 (OASD/M&RA-MR-74-3, AFHRL-TR-74-23, DDC Document AD-779 010) (Project 4499, Task 449907, Work Unit 44990750; Contract AF 41609-73-C-0030, Human Resources Research Organization (HumRRO)).** The interest of college-bound high school seniors in applying for college-based military officer training programs was assessed. Comparisons were made between surveys conducted in 1972 and 1973. It was found that the Air Force and the Navy ROTC scholarship programs were the most popular with the youth surveyed. Higher likelihood of applying was found among youths from low income families. Travel, adventure and the opportunity for technical and professional training were strong motivators in applying for officer training programs. Prominent among the specific reasons for affiliating with military programs were: being able to attend the college of one's choice; getting tuition paid; and the term of obligated service. There was very little awareness of officer compensation and the service sponsorship of the various programs offered.

35 **McGrevy, D.F., Knouse, S.B., & Thompson, R.A. Relationship among an individual intelligence test and two Air Force screening and selection tests. March 1974 (AFHRL-TR-74-25, DDC Document AD-781 033) (Project 7719, Task 771911, Work Unit 77191106).** With the implementation of the All Volunteer Force concept, the Air Force must insure that the objectively measurable range of ability in its manpower pool is being utilized. This is especially true for minority groups who have been categorized and channeled into military career areas based upon their performance on two selection tests: the Armed Forces Qualification Test (AFQT) and the Airman Qualifying Examination (AQE). To investigate the relationship of the AFQT and AQE to the general mental ability of different racial groups of airmen, a sample of 100 black and 100 white Air Force basic trainees was administered an established test of general mental ability, the Wechsler Adult Intelligence Scale (WAIS). The Verbal, Performance, and Full Scale IQ scores of the white and black airmen were compared to their AFQT scores and their four AQE Aptitude Indexes. Significant differences between black and white airmen were found on the AFQT, the four AQE Aptitude Indexes, and the three WAIS IQs. Regression analyses demonstrated most differences to be interaction effects between race and Air Force test scores. Implications for further research into Air Force airmen selection tests were discussed.

36 **Vitola, B.M., Mullins, C.J., & Brokaw, L.D. Quality of the all-volunter Air Force–1973. April 1974 (AFHRL-TR-74-35, DDC Document AD-781 755) (Project 7719, Task 771916, Work Unit 77191602).** Characteristics of all-volunteer force enlistees were compared to characteristics of 1970 through 1972 enlistees. Analyses of the four years of data result in the following conclusions: (a) compared to the 1971 and 1972 accessions, there has been an increase in average aptitudes of the 1973 accessions in the Mechanical and Electronics areas. There has been a decrease in the Administrative and General areas. Air Force quality is improving but did not reach the quality level demonstrated by 1970 first-term accession, (b) there has been an appreciable loss of accessions who have completed education beyond the high school level. This loss is accompanied by a year-by-year downward shift of percentages of first-term airmen scoring at the higher centile levels of the four

aptitude indexes of the AQE, (c) the aptitude level patterns of South-Southwest (area 3 and 4) enlistees were not consistently low, compared to the other areas, as they were in 1970 through 1972, (d) the aptitude levels of Black enlistees in 1973 are higher than they were in 1970 through 1972. This phenomenon obtained by geographic area of enlistment and total sample, and (e) other than a possible need to offer incentives to high-aptitude people, especially in the General and Electronics areas, Air Force operational capability does not appear to be significantly affected by the absence of the draft.

37 **Fisher, A.H., Jr., & DiSario, M.R. Attitudes of youth toward military service in a zero-draft environment: results of a national survey conducted in November 1972. February 1974 (OASD/M&RA-MR-74-8, AFHRL-TR-74-37, DDC Document AD-781 370) (Project 4499, Task 449907, Work Unit 44990750; Contract AF 41609-73-C-0030, Human Resources Research Organization (HumRRO)).** This study analyzed the 1972 results of a continuing DoD national survey aimed at studying the enlistment motivation and attitudes toward military service of American youth. A total of 1,924 male youths, aged 16 to 21 years, were interviewed during a period of low draft calls, reduced troop levels in Vietnam, and increased service pay allowances. Topics covered included their willingness to enlist in the active service under a zero-draft condition, to volunteer for active service as officers, and their views on enlistment incentives, service preference, and career objectives. Results varied according to age and educational status, with high school students showing a higher enlistment potential than college students and males not in school. Fully paid college educations provided the greatest enlistment incentive, especially to the 16 and 17-year olds. Bonus options appealed especially to non-whites. Pay and secure employment were indorsed as the two most important life goals.

38 **Fisher, A.H., Jr., & Rigg, L.S. Career potential of enrollees in PLC, ROC, and AVROC: a comparison of surveys conducted in May 1972 and May 1973. November 1973 (OASD/M&RA-MR-74-5, AFHRL-TR-74-38, DDC Document AD-781 371) (Project 4499, Task 449907, Work Unit 44990750; Contract AF 41609-73-C-0030, Human Resources Research Organization (HumRRO)).** Research into the short-range and long-range career intentions of PLC, ROC and AVROC enrollees in 1973 and 1972 showed that most enrollees intended to stay in their programs. From 30 percent to 40 percent indicated they intended to pursue a military career, while about 50 percent were undecided. Knowledge of financial benefits did not influence career intentions; those planning to leave the service were as likely to overestimate pay and benefits as were the career-oriented personnel.

Reasons given for entering the program were similar in both years, with "Military career opportunities," "Travel, adventure, and new experiences," and "service to your country" the most popular reasons.

39 **Fisher, A.H., Jr., Orend, R.J., & Rigg, L.S. Career potential among ROTC enrollees: a comparison of 1972 and 1973 survey results. November 1973 (OASD/M&RA-MR-74-4, AFHRL-TR-74-39, DDC Document AD-781 374) (Project 4499, Task 449907, Work Unit 44990750; Contract AF 41609-73-C-0030, Human Resources Research Organization (HumRRO)).** Research into the career intentions of Army, Navy and Air Force ROTC cadets showed that a majority were willing to stay and continue into the advanced program, even without financial aid. The proportion for Army enrollees was much lower than for Navy or Air Force enrollees. Almost half of all advanced cadets were undecided about staying on active duty for more than one tour of duty, with Army enrollees the least likely and Air Force enrollees the most likely to remain.

"Military career opportunities" and the chance for "travel, adventure, and new experiences" were the most commonly cited reasons for entering ROTC. Navy cadets also indorsed the "opportunity for further academic education."

A majority of Army and Air Force scholarship holders, and less than half the Navy scholarship enrollees, indicated they would have entered ROTC without a scholarship. Over 60 percent in all services indicated they would have entered ROTC without a subsistance allowance.

40 **Mullins, C.J., Vitola, B.M., & Abellera, J.W. Users of cannabis only. April 1974 (AFHRL-TR-74-41, DDC Document AD-A002 145) (Project 7719, Task 771913, Work Unit 77191304).** Subjects who have used only cannabis were compared with those who have used cannabis along with other drugs, and with a control sample on whom no drug-using information was available. Results indicate that cannabis-only users are more effective than users of other drugs, and that even cannabis-only users compare unfavorably with the control subjects in certain metrics which appear to require motivation as an important component. It is suggested that this may be evidence for the "amotivational syndrome" reported in the literature.

41 **Vitola, B.M., Mullins, C.J., & Weeks, J.L. Characteristics of women in the Air Force 1970 through 1973. July 1974 (AFHRL-TR-74-59, DDC Document AD-A000 049) (Project 7719, Task 771916, Work Unit 77191602).** The total input of WAF enlistees for 1970 through 1973 (N = 20,988) were compared with male enlistees for the same period (N = 324,935). WAF AQE-A and AQE-G scores in 1973 have dropped less than those for males relative to 1970. WAF AQE-M and AQE-E scores in 1973 were higher than they were in 1970, whereas similar scores for males have declined slightly. Educational level for males has declined in the years 1970-1973, whereas, for WAF, it has climbed somewhat. Racial mix for females is about the same as for males, but the contribution by the various recruiting areas to the total number of Black women in the Air Force varies considerably from area to area. As with males, the younger females tend to have lower aptitude scores.

42 **Weeks, J.L., Mullins, C.J., & Vitola, B.M. Prediction of drug abuse by the life values questionnaire. August 1974 (AFHRL-TR-74-60, DDC Document AD-A000 048) (Project 7719, Task 771913, Work Unit 77191304).** Three experimental psychological tests were investigated to determine if they contributed significantly to the prediction of seven drug abuse criteria when combined with available demographic and aptitude variables. The results indicate that only one of these tests, the Life Values Questionnaire, adds significantly to prediction. Although the validities yielded by the Life Values Questionnaire for the criteria are not high, it appears that its predictive variance is fairly unique.

43 **Beusse, W.E. Utilization of veterans' benefits by Army new standards FY 1969 separatees. March 1974 (OASD/M&RA-MR-74-9, AFHRL-TR-74-74, DDC Document AD-785 384) (Project 4499, Task 449905, Work Unit 44990550).** This study provides information on the utilization of veterans' benefits by Army New Standards separatees. Information is presented concerning: their knowledge of their V.A. benefits; past, present, and anticipated use of educational benefits; their need for and use of medical benefits; their use of employment assistance; and their use of other V.A. benefits. The results indicate that a majority of the New Standards veterans were aware of their veterans' benefits. Although many made use of their benefits, there appeared to be room for increasing the low aptitude veteran's utilization of these programs.

44 **Beusse, W.E. The impact of military service on low aptitude men. February 1974 (OASD/M&RA-MR-74-2, AFHRL-TR-74-75, DDC Document AD-785 394) (Project 4499, Task 449905, Work Unit 44990550).** The purpose of this study was to examine the impact of military experience upon the post-service lives of low aptitude men. The data were collected by interview on a set of 477 Army New Standards FY 1969 separatees and 477 nonveterans who were matched by race, educational level, age, geographic location, and were within a narrow AFQT range.

The literature concerning the theoretical post-service effects of military service was reviewed. Also, the results of a number of empirical studies dealing with the effects of military service upon post-service economic status were examined.

The results of the data analysis indicate that military service has a positive impact upon the post-service lives of low aptitude men. Compared to their nonveteran twins, it was found that veterans were more likely to (1) complete their high school education or obtain a GED, (2) be employed in the higher skilled, higher paying occupations and industries, (3) have joined a union, and (4) to have migrated from the geographic region in which they resided at age 18.

It was also found that veterans earn significantly higher wages than nonveterans. Veterans fared better than nonveterans within each racial-educational subgroup. These income differences were found to be independent of unmatched background characteristics.

45 **Beusse, W.E. Documentation of the 1973 DOD personnel survey. May 1974 (OASD/M&RA-MR-74-11, AFHRL-TR-74-80, DDC Document AD-785 385) (Project 4499, Task 449907, Work Unit 44990750; Contract AF 41609-73-C-0030, Human Resources Research Organization (HumRRO)).** The 1973 DoD Personnel Survey was administered as part of the Office of the Assistant Secretary of Defense (Manpower and Reserve Affairs) research program. The purpose of the survey was to provide DoD officials with information on the attitudes of servicemen toward a number of DoD-wide programs, policies and issues. This report documents the survey development, administration procedures and processing of the data.

46 **Mullins, C.J., Weeks, J.L., & Vitola, B.M. Variables related to hallucinogen use. December 1974 (AFHRL-TR-74-95, DDC Document AD-A011 615) (Project 7719, Task 771913, Work Unit 77191304).** A sample of 1,283 self-admitted, pre-service hallucinogen users was compared with an equivalent sample of airmen who had no known record of drug abuse. The results of this study indicate that it is highly probable that hallucinogen users have used other drugs. There are relationships between hallucinogen use and geographic area of enlistment, aptitude scores, educational level, age at enlistment, and religious preference. Hallucinogen use is also related to the probability of receiving an undesirable discharge, to APR, and promotion rate.

47 **Beusse, W.E. The impact of draft vulnerability on service academy attrition. April 1975 (OASD/M&RA-74-12, AFHRL-TR-74-100, DDC Document AD-A017 081) (Project 4499, Task 449906, Work Unit 44990642).** The purpose of this study was to examine the relationship between draft vulnerability and attrition from the service academies. Attrition among the members of the Classes of 1972-1976 at each of the three DoD Academies was examined in relation to the individual's draft vulnerability imputed from his lottery number. The data did not indicate any strong or consistent tendency for draft-safe cadets/midshipmen to have attritted in higher proportion than men who were vulnerable to the draft.

48 **Abellera, J.W., Mullins, C.J., & Earles, J.A. Value of personnel classification information. March 1975 (AFHRL-TR-75-2, DDC Document AD-A011 617) (Project 7719, Task 771914, Work Unit 77191402).** This study outlines the development of a methodology for meaningfully estimating the value of classification information used by the Air Force to make selection/assignment decisions which lead to the satisfaction of first-term enlisted manpower requirements. The methodology, called the optimal allocation strategy, is employed to solve a representative allocation problem in a hypothetical enlistment year. This exercise serves to show how the value of available information may be estimated when used in the most efficient manner possible. Four conclusions are drawn from the study: (1) the value of classification information currently available to the Air Force can be estimated in tangible terms, (2) the value of even better classification information which could become available in the future as a result of specific research can be estimated in tangible terms, (3) the means for getting the most out of currently available information exist, and (4) a variety of personnel policies and programs can be evaluated in terms of both real and realizable dollar payoffs.

49 **Earles, J.A., Mullins, C.J., Abellera, J.W., & Michelson, A.E. Drug use data base. July 1975 (AFHRL-TR-75-15, DDC Document AD-A017 169) (Project 7719, Task 771913, Work Unit 77191304).** A data base of various drug use variables has been created on a broad sample of 13,452 Air Force service men, officers as well as enlisted men. While lack of resources prevents a detailed analysis of information in the data base, certain trends are evident. Alcohol is consumed by most Air Force personnel, but current use of illicit drugs is confined to a small percentage. In addition, users of illicit drugs are predominately in the first term enlisted ranks. Finally, more than one-third of the users of illicit drugs claim they usually buy their drugs on Air Force bases.

50 **Weeks, J.L., & Mullins, C.J. Prediction of drug abuse by the social factors questionnaire. July 1975 (AFHRL-TR-75-16, DDC Document AD-A017 170) (Project 7719, Task 771913, Work Unit 77191304).** Two measures, the lawlessness and permissiveness scores, yielded by a locally developed

experimental psychological test were investigated to determine if they added significantly to the prediction of seven drug abuse criteria when combined with available demographic and aptitude variables. The results indicate that both scores add significant predictive variance to the background variables and appear to have considerable success in discriminating between drug abusers and nonabusers.

51 **Alley, W.E., & Berberich, G.L. An analysis of AFROTC detachment viability. August 1975 (AFHRL-TR-75-18, DDC Document AD-A017 797) (Project 7719, Task 771902, Work Unit 77190243).** This report is one of a series describing: (a) the development of effectiveness criteria for AFROTC detachments, and (b) relationships between the criteria and various environmental and program characteristics. Normative data are presented for selected criteria (enrollment, production and unit costs) for each school year between 1966 and 1974. Multiple regression techniques were used to determine the extent to which criterion performance was attributable to characteristics, of the host college and characteristics of the program. Predictive stability was examined across both institutions and time. Implications of the findings for evaluating both current detachments and potential host sites were discussed.

52 **Guinn, N., Johnson, A.L., & Kantor, J.E. Screening for adaptability to military service. May 1975 (AFHRL-TR-75-30, DDC Document AD-A014 790) (Project 7719, Task 771902, Work Unit 77190241).** A sample of 15,252 basic airmen was administered the history opinion inventory (HOI) during basic military training. The service careers of these subjects were monitored for two years in order to assess the ability of the HOI to predict the criterion of in/out of service. An *a priori* adaptation index developed from HOI items correctly identified as high risk 23 percent of those subjects discharged from service during the two year period, while incorrectly labeling as high risk only 6 percent of those subjects still in service after two years. The possibility of increasing the accuracy of prediction by utilizing biographic/demographic data and the operational usefulness of the HOI are discussed.

53 **Mullins, C.J., Williams, J.D., Vitola, B.M., & Michelson, A.E. Effectiveness evaluation of Air Force advertising. September 1975 (AFHRL-TR-75-45, DDC Document AD-A018 610) (Project 7719, Task 771913, Work Unit 77191308).** The Airman Enlistment Questionnaire-R was administered to a sample of non-prior-service enlistees, 10,666 males and 1,806 females. Analysis of the responses indicates that: (1) enlistees are growing more aware of Air Force advertising (2) females appear to be more alert to media programs than they used to be (3) females are more interested in all kinds of Air Force jobs than they were, and (4) there are enough differences across geographic areas to justify close study of the possibility of differential advertising by geographic area.

54 **Guinn, N. Identification of service irritants: Australia, Canada, United Kingdom and United States. July 1975 (AFHRL-TR-75-52, DDC Document AD-A014 789) (Program Element DADD 1000).** A review of research on service irritants cited by military servicemen in Australia, Canada, United Kingdom, and United States revealed an outstanding degree of similarity in responses. Certain factors such as inadequate pay, domestic problems associated with military life, change of station, and military rules and regulations were universally mentioned as negative aspects of a military career. The effect of these irritants on enlistment motivation, job satisfaction, and retention were discussed.

55 **Alley, W.E., & Gould, R.B. Feasibility of estimating personnel turnover from survey data—a longitudinal study. October 1975 (AFHRL-TR-75-54, DDC Document AD-A018 777) (Project 7719, Task 771902, Work Unit 77190239).** This report investigates the validity of career intent and job attitude statements for predicting reenlistments among 54,803 airmen in 101 enlisted specialties. Statements were made while completing Air Force occupational surveys during the period 1966 to 1971. Frequency and percentage distributions characterizing item responses and career decisions of the sample are given. Relationships between career intent/job attitude responses and actual reenlistment decisions were studied using multiple linear regression techniques. Job attitudes were found to be substantially related to career decisions but did not provide unique contributions to predictions of career decisions when used in conjunction with career intent statements. A

model-seeking exercise identified a second-degree polynomial model with career intent and time-in-service interaction vectors as the most appropriate prediction model. Separate prediction equations were obtained for a number of selected subsamples representing two, three, and five-digit Air Force specialty code and aptitude requirement groupings. Homogeneous grouping exercises were performed to illustrate a procedure for reducing the number of subsample prediction equations to a minimum subset.

Practical examples of forecasting reenlistment rates are illustrated. The regression model selected for the demonstration used weights derived from the total sample to predict the percentage of actual reenlistments for thirty specialties. Overall, approximately 17 percent of the sample remained in service. The average difference between actual vs predicted reenlistment rates across specialties ranged from 9 percent for airmen surveyed in their first year to 8 percent, 6 percent and 2 percent for airmen in their second through fourth year of service, respectively.

56 **Long, G.E., & Varney, N.C. Automated pilot aptitude measurement system. September 1975 (AFHRL-TR-75-58, DDC Document AD-A018 151) (Project 1137, Task 113701, Work Unit 11370102; Contract AF 41609-73-C-0037, McDonnell Douglas Astronautics Co. – East).** This study addresses the problem of predicting success in undergraduate pilot training (UPT) through the measurement of performance on a learning sample of flight tasks administered prior to the initiation of training. The learning sample which would be used to augment existing pilot selection procedures was proposed as a means of reducing attrition during UPT.

Performance measures on a five hour learning sample of flight tasks, administered with an Automated Pilot Aptitude Measurement System (APAMS) were collected from 178 candidates for UPT selected for training with current procedures. These performance measures were then compared with performance during T-41 and T-37 phases of UPT.

The results indicated that performance in both phases of training could be predicted from performance on the learning sample. Grades given by instructors in T-41 training were highly correlated with performance measures on the learning sample. Also, candidates who were eliminated from both phases of training, including those eliminated for Manifestation of Apprehension (MOA), Self Initiated Elimination (SIE), as well as eliminees for Flying Training Deficency (FTD) could be discriminated by their performance on the learning sample.

The results indicated that the learning sample approach could contribute substantially to existing pilot selection procedures in reducing current attrition rates in UPT.

57 **Hunter, D.R. Development of an enlisted psychomotor/perceptual test battery. November 1975 (AFHRL-TR-75-60, DDC Document AD-A020 544) (Project 7719, Task 771915, Work Unit 77191506).** A battery of seven psychomotor/perceptual tests, developed by Biotechnology, Incorporated, of Falls Church, Virginia, was administered to 380 airmen assigned to the 3701 Personnel Processing Squadron at Lackland Air Force Base, Texas. A paper-and-pencil battery of 21 tests was also administered to the airmen.

The objectives of the project were to determine the psychometric characteristics of the psychomotor/perceptual battery and to compare the performance of "high" and "low" ability airmen (as determined by Armed Forces Qualification Test scores).

Analysis of the data indicated that the measures obtained from the psychomotor/perceptual battery were generally highly reliable. Factor analyses resulted in the identification of six factors that were specific to the psychomotor/perceptual battery, four factors that were specific to the paper-and-pencil measures, and one factor that was common to both batteries.

The sample of subjects was divided into upper and lower groups based upon AFQT scores. The performance of the upper and lower groups on the paper-and-pencil and psychomotor/perceptual batteries was compared and differences evaluated for statistical significance. It was found that the differences between the upper and lower groups were generally much smaller on the psychomotor/perceptual tests than on the paper-and-pencil measures.

Recommendations for subsequent research and development are given.

58 **Kantor, J.E., & Guinn, N. Comparison of performance and career progression of high school graduates and non-graduates in the Air Force. September 1975 (AFHRL-TR-75-73, DDC Document AD-A022 973) (Project 7719, Task 771902, Work Unit 77190240).** The performance and career progression of a sample of 20,705 airmen were monitored throughout their initial tour of service. For comparative purposes, this sample was divided into high school graduate and non-graduate groups and further subdivided by Armed Forces Qualification Test (AFQT) mental categories. Points of comparison included: disposition from basic military and technical training, attainment of skill levels, number of disciplinary actions and unsuitability discharges, and reenlistment decision. On almost all measures, high school graduates constituted a significantly more successful military group than did the non-graduates, and among the non-graduates, in terms of mental category subgroups, there were almost no differences in performance. In addition, the effects of varying enlistment requirements on this sample are presented, and attention was directed toward determining which non-graduates might be better risks than others for military service.

59 **Alley, W.E., & Berberich, G.L. A procedure for estimating enrollment and cost factors at potential AFROTC host-sites. December 1975 (AFHRL-TR-75-76, DDC AD-A025 849) (Project 7719, Task 771902, Work Unit 77190243).** This report is one of a series describing (a) the development of effectiveness criteria for AFROTC detachments, and (b) relationships between the criteria and various environmental and program characteristics. The objective of this report was to develop a method for estimating student enrollments and total operating costs at prospective host-site institutions by using institutional measures which were easily updated. Standard multiple regression techniques were used in the analysis. The predictors were chosen for their high validity and their easy access in an operational setting. Utilizing the equations and procedures set forth in the report, cost and enrollment figures can be derived for potential AFROTC host-sites.

60 **Weeks, J.L., Mullins, C.J., & Vitola, B.M. Airman classification batteries from 1948 to 1975: A review and evaluation. December 1975 (AFHRL-TR-75-78) (Project 7719, Task 771910, Work Unit 77191010).** From 1948 to 1975, the United States Air Force employed ten different multiple aptitude batteries for the purpose of either classifying or selecting and classifying nonprior service enlistees. Each of the different bateries is described and evaluated in terms of standardization, reliability, and validity.

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